Maryland Historical Trust

Maryland Inventory of Historic Properties number: BA-2673

Name: B0136/GORES MILL RD. OVER LITTLE FALLS.

The bridge referenced herein was inventoried by the Maryland State Highway Administration as part of the Historic Bridge Inventory, and SHA provided the Trust with eligibility determinations in February 2001. The Trust accepted the Historic Bridge Inventory on April 3, 2001. The bridge received the following determination of eligibility.

MARYLAND HISTORICAL TRUST

Eligibility Recommended _____ Eligibility Not Recommended __X____

Criteria: ____A ____B ____C ____D Considerations: ___A ___B ___C ___D ___E ___F ___G __None

Comments: _____

_____

_____

Reviewer, OPS: _Anne E. Bruder_____ Date: __3 April 2001____

Reviewer, NR Program: __Peter E. Kurtze_____ Date: __3 April 2001____

MARYLAND INVENTORY OF HISTORIC BRIDGES
HISTORIC BRIDGE INVENTORY
MARYLAND STATE HIGHWAY ADMINISTRATION/
MARYLAND HISTORICAL TRUST

MHT No. BA-2673

SHA Bridge No. B 0136 **Bridge name** Gores Mill Road over Little Falls

LOCATION:
Street/Road name and number [facility carried] Gores Mill Road

City/town Middletown 1.4 mi NE of Middletown Rd. **Vicinity** X

County Baltimore

This bridge projects over: Road ___ **Railway**___ **Water** X **Land** ___

Ownership: State ___ **County** X **Municipal** ___ **Other** ___

HISTORIC STATUS:
Is bridge located within a designated historic district? Yes ___ **No** X
National Register-listed district ___ **National Register-determined-eligible district** ___
Locally-designated district ___ **Other** ___
Name of district ___

BRIDGE TYPE:
Timber Bridge ___:
Beam Bridge ___ **Truss -Covered** ___ **Trestle** ___ **Timber-And-Concrete** ___

Stone Arch Bridge ___

Metal Truss Bridge ___

Movable Bridge ___:
Swing ___ **Bascule Single Leaf** ___ **Bascule Multiple Leaf** ___
Vertical Lift ___ **Retractile** ___ **Pontoon** ___

Metal Girder ___:
Rolled Girder ___ **Rolled Girder Concrete Encased** ___
Plate Girder ___ **Plate Girder Concrete Encased** ___

Metal Suspension ___

Metal Arch ___

Metal Cantilever ___

Concrete X:
Concrete Arch ___ **Concrete Slab** X **Concrete Beam** ___ **Rigid Frame**

Other ___ **Type Name** ___

HA-2673

DESCRIPTION:

Setting: Urban _____ **Small town** _____ **Rural** X

Describe Setting:

Bridge B0136 carries Gores Mill Road in an east-west direction over Little Falls which flows to the south. Adjacent to the bridge (within 200 yards) are an old mill, a house, mill pond and dam, mill race, and a waterfall, all built c.1860. The millrace enters Little Falls, immediately upstream of the bridge. Bridge B0136 is approximately 200 yards from Bridge B0138, which is also a concrete slab bridge.

Describe Superstructure and Substructure:

The bridge is a two span continuous concrete slab with a stone abutment on the west and a concrete abutment on the east; the pier is a solid shaft of concrete. The curb to curb width is 20.0 feet, the deck out to out width is 22.0 feet. There is no skew. It has two 14.0 feet spans and the overall structure length is 31.0 feet; the bridge has solid concrete parapets which are integral to the deck slab.

The latest inspection completed in 1993 shows that the overall condition of the bridge is fair, although both slab spans exhibit heavy spalling along the north edges with some exposed reinforcement. The east abutment is heavily spalled on the south end and the north end has displaced three inches toward the stream bed. The footing is in fair condition. The northeast wingwall has been replaced with riprap and asphalt. The southeast wingwall has fractured at the top of the abutment interface and the base is heavily spalled. The embankment is eroded, causing some undermining of the footing. This wingwall shows signs of collapse and should be replaced. The west abutment is constructed of stone with vertical concrete edges at the wingwall interfaces. The base of the footings and the wingwalls are in fair condition. The pier is a solid shaft in fair condition although the footing has spalled and previous spalling repairs have failed.

Discuss Major Alterations:

The northeast wingwall has been replaced with riprap and asphalt.

HISTORY:

WHEN was bridge built (actual date or date range) Concrete Bridge:1920, Stone Abutment: 1904
This date is: Actual __ **Estimated** X
Source of date: Plaque __ **Design plans** __ **County bridge files/inspection form** X
Other (specify) _____

WHY was the bridge built?

Historic crossing to serve local mill transportation needs

WHO was the designer?

Unknown

WHO was the builder?

Unknown

WHY was the bridge altered?

The bridge was altered to ensure the bridge's structural integrity.

BA-2673

Was this bridge built as part of an organized bridge-building campaign?
There is no evidence that the bridge was built as part of an organized bridge building campaign.

SURVEYOR/HISTORIAN ANALYSIS:

This bridge may have National Register significance for its association with:
A - Events _____ **B- Person** _____
C- Engineering/architectural character X

Was the bridge constructed in response to significant events in Maryland or local history?
Was the bridge constructed in response to significant events in Maryland or local history? Reinforced concrete slab bridges are a twentieth century structure type, easily adapted to the need for expedient engineering solutions. Reinforced concrete technology developed rapidly in the early twentieth century with early recognition of the potential for standardized design. The first U.S. attempt to standardize concrete design specifications came in 1903-04 with the formation of the Joint Committee on Concrete and Reinforced Concrete of the American Society of Civil Engineers.

Maryland's road and bridge improvement programs mirrored economic cycles. The first road improvement program of the State Roads Commission was a 7 year program, starting with the Commission's establishment in 1908 and ending in 1915. Due to World War I, the period from 1916-1920 was one of relative inactivity; only roads of first priority were built. Truck traffic resulting from war-related factories and military installations generated new, heavy traffic unanticipated by the builders of the early road system. From 1920 to 1929, numerous highway improvements occurred in response to the increase in Maryland motor vehicles from 103,000 in 1920 to 320,000 in 1929, with emphasis on the secondary system of feeder roads which moved traffic from the primary roads built before World War I. After World War I, Maryland's bridge system also was appraised as too narrow and structurally inadequate for the increasing traffic, with plans for an expanded bridge program to be handled by the Bridge Division, set up in 1920. In 1920 under Chapter 508 of the Acts of 1920 the State issued a bond of $3,000,000.00 for road construction; the primary purpose of these monies was to meet the state obligations involving the construction of rural post roads. The secondary purpose of these monies was to fund [with an equal sum from the counties] the building of lateral roads. The number of hard surfaced roads on the state system grew from 2000 in 1920 to 3200 in 1930. By 1930, Maryland's primary system had become inadequate to the huge freight trucks and volume of passenger cars in use, with major improvements occurring in the late 1930s. Most improvements to local roads waited until the years after World War II.

With a diverse topographical domain encompassing numerous small and large crossings, Maryland engineers quickly recognized the need for expedient design and construction.

In the early years, there was a need to replace the numerous single lane timber bridges. Walter Wilson Crosby, Chief Engineer stated in 1906, "The general plan has been to replace these [wood bridges] with pipe culverts or concrete bridges and thus forever do way with the further expense of the maintenance of expensive and dangerous wooden structures". Within a few years, readily constructed standardized bridges of concrete were being built throughout the state.

The creation of standard plans and a description of their use was first announced in the 1912-15 Reports of the State Roads Commission whereby bridges spanning up to 36 feet were to use standardized designs.

Published on a single sheet, the 1912 Standard Plans included those structures that were amenable to such an approach: slab spans, (deck) girder spans, box culverts, box bridges, abutments, and piers (State Roads Commission 1912). Slab spans, with lengths of 6 to 16 feet in two foot increments, featured a solid parapet that was integrated into the slab, with a roadway of 22 feet.

In the Report for the years 1916-1919, a revision of the standard plans was noted:

> During the four years covered by this report, it has been found necessary to revise our standard plans for culverts and bridges, to take care of the increased tonnage which they have been forced to carry. Army cantonments...increased their operations several hundred per cent, and the brunt of the enormous truck traffic resulting therefrom, was borne by the State Roads of Maryland. In addition to these war activities, freight motor lines from Baltimore to Washington, Philadelphia, New York, and various points throughout Maryland, and the weight of many of these trucks when loaded, was in excess of the loads for which our early bridges were designed (State Roads Commission 1920:56).

Published on separate sheets, the new standard plans (State Roads Commission 1919) for slab bridges reveal that the major changes was an increase in roadway width from 22 feet to 24 feet and a redesign of the reinforcement. The slab spans continued to feature solid parapets integrated into the span. The range of span lengths remained 6 to 16 feet, but the next year (1920) witnessed the issue of a supplemental plan for a 20 foot long slab span (State Roads Commission 1920).

The 1924 standard plans remained in effect until 1930, when the roadway width for all standard plan bridges was increased to 27 feet in order to accommodate the increasing demands of automobile and truck traffic (State Roads Commission 1930). The range of span lengths remained the same, but there were some changes designed to increase load bearing capacities. The reinforcing bars were increased in thickness. Visually, the 1930 design can be distinguished from its predecessors by the pierced concrete railing that was introduced at this time.

Three years later, in 1933, a new set of standard plans was introduced (State Roads Commission 1933). This time, their preparation was not announced in the Report; new standard plans were by this time nothing special - they had indeed become standard. Once again accommodating the ever-increasing demands of traffic, the roadway width was increased, this time to 30 feet. The slab span's reinforcing bars remained the same diameter but were placed closer together to achieve still more load bearing capacity.

A system of standard nomenclature for plans was introduced at this time: span type was indicated by a two-letter designator followed by span length and the year of the plan. Thus, CS-18-33 indicates an 18 foot concrete slab of the 1933 standard plan design; CG-36-33 was a 36 foot concrete girder (T-beam) of the same year. The inclusion of the year designator gave ready access to design details for each bridge and indicates that the State Roads Commission anticipated revisions to standard plans.

Based upon documentary evidence, Baltimore County and City were the early pioneers in concrete bridge building in Maryland. The first reinforced concrete bridge documented in Maryland was the bridge at Sherwood Station, built in 1903 by Baltimore County. This bridge was located in the Riderwood area on Joppa Road near the intersection with Bellona Avenue. The announcement of this bridge's completion in the Third Report on the Highways of Maryland reveals the pride that was felt at its construction:

> The bridge that was built this year, 1903, near Sherwood Station shows the progressive character of the work that the County Roads Engineer is inaugurating. What is known as the steel concrete form of construction was adopted, which uses reinforced concrete beams instead of simple steel or wooden beams as in other forms of construction; this is the first example of its kind in the State (Johnson 1903:169).

The announcement goes on to report that "Steel rods are imbedded in the concrete beams to enable them to withstand heavy loads; but no steel surface is exposed to air, so that there is practically no cost for maintenance of a bridge of this character."

Baltimore City quickly followed with a reinforced concrete bridge of its own, at Lexington Street over Gwynn's Run. This 66 foot span was "the first reinforced concrete arch which has been built by the city" (Annual Report of the City Engineer 1905:92) and may be the first reinforced concrete arch in the state. According to the report, "Kahn" bars were used to reinforce the concrete. However, this was not the first time that Baltimore City had built a concrete arch; a concrete arch, of plain concrete (unreinforced) was used, in 1900 to lead the Schroeder's Run sewer as an open drain underneath residences (Annual Report of the City Engineer 1901:7).

Following the construction of reinforced bridges at Sherwood Station and in Baltimore City the Maryland Geological Survey adopted a plan for reinforced concrete bridge construction, as described by Walter Wilson Crosby, Chief Engineer: "The general plan has been to replace these [wood bridges] with pipe culverts or concrete bridges and thus forever do way with the further expense of the maintenance of expensive and dangerous wooden structures" (Crosby 1906:379).

An additional advantage of concrete bridges was that concrete construction used local materials and labor. A great number of Maryland's metal truss bridges had been fabricated by out-of-state bridge companies. Proponents of concrete bridges, such as the engineer Daniel Luten relied on this advantage when advocating his concrete bridges: "Concrete bridges are built with home labor and materials. The money expended for a concrete bridge returns directly to the taxpayers".

Other early documented bridges in Baltimore County include one at Gwynn Oak in 1906 and one on Houck's Mill Road in 1908. A search by Baltimore County Preservation Officer, John McGrain, for fabrication dates of wrought iron bridges indicated that 1904 was the year when the last wrought iron bridges were ordered by the county. In 1909 the Roads Engineer report claimed that "31 reinforced concrete bridges and culverts, a stone culvert and three wooden bridges were built at a cost of $22,746.98".

Evidence from historic maps suggests that almost all of the extant concrete slab bridges built before 1940 in Baltimore County replaced earlier bridges. With the exception of two bridges, all of these structures lie on roads whose alignments have changed little since the middle of the nineteenth century. The two exceptions are both located on Shelbourne Avenue in Arbutus. Shelbourne Avenue does not appear on the 1850 map of Baltimore County but does appear on the 1915 map. Both concrete slabs bridges on Shelbourne Avenue, however, were built after 1915. The evidence therefore suggests that these two bridges were also built to replace previous structures.

When the bridge was built and/or given a major alteration, did it have a significant impact on the growth and development of the area?
There is no evidence to suggest that the construction of this bridge had a significant impact on the growth and development of this area.

BA-3673

Is the bridge located in an area which may be eligible for historic designation and would the bridge add to or detract from the historic/visual character of the potential district?
The bridge would not add to or detract from a potential historic district.

Is the bridge a significant example of its type?
Yes, age indicates a very early type of concrete slab bridge.

Does the bridge retain integrity of important elements described in Context Addendum?
Yes, although deterioration is significant throughout the bridge, and the northeast wingwall has been replaced and the county inspection files indicate the southeast wingwall is near collapse.

Is the bridge a significant example of the work of a manufacturer, designer, and/or engineer?
It is not known whether this structure is a significant example of a manufacturer, designer, and/or engineer.

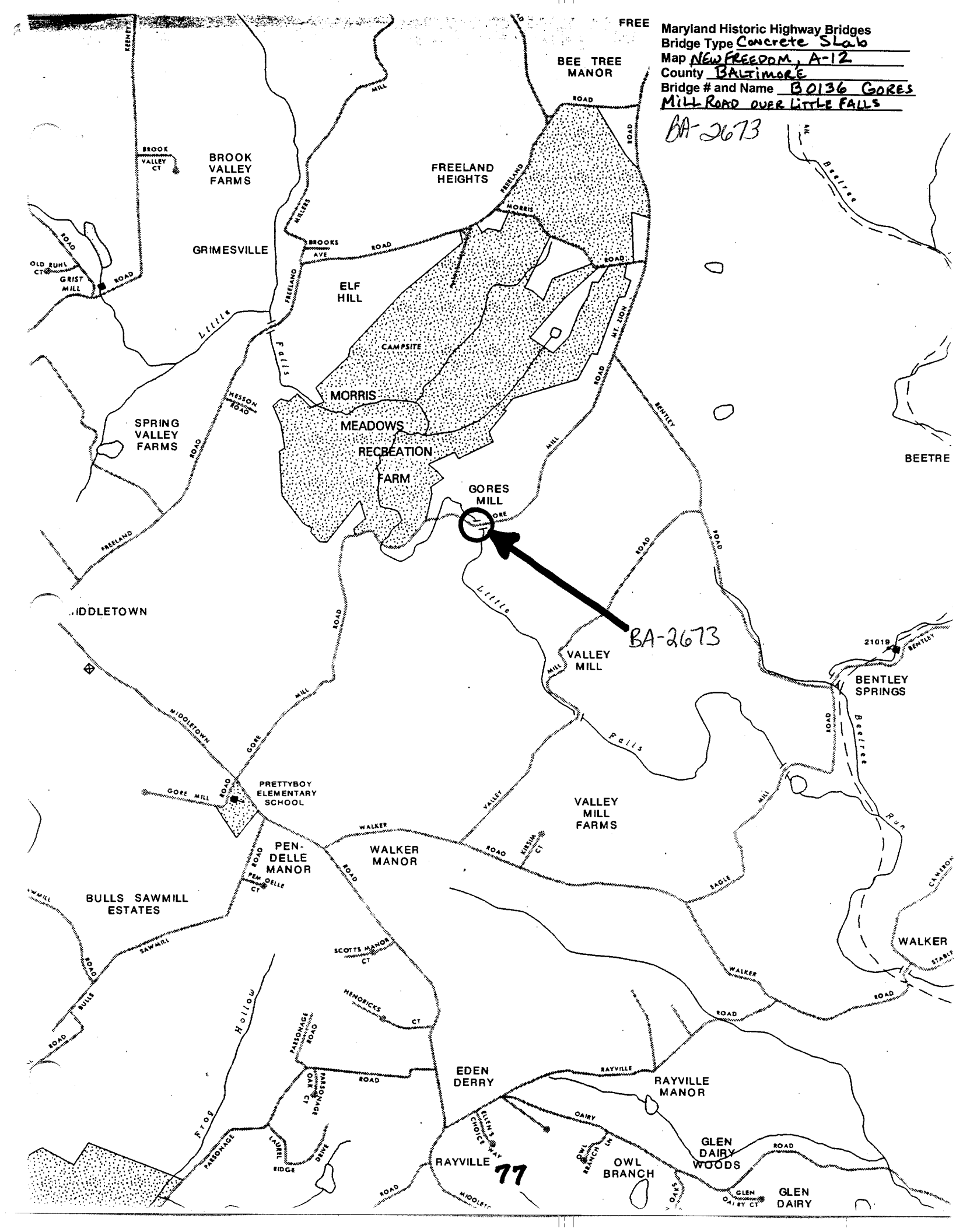
Should the bridge be given further study before an evaluation of its significance is made?
Yes, to determine the relationship with the mill.

BIBLIOGRAPHY:

County inspection/bridge files X **SHA inspection/bridge files** _____
Other (list):

SURVEYOR:

Date bridge recorded 08/15/95
Name of surveyor Colin Farr
Organization/Address P.A.C. Spero & Company, Suite 412, 40 West Chesapeake Ave., Baltimore, MD 21204
Phone number (410) 296-1635 **FAX number** (410) 296-1670


Maryland Historic Highway Bridges
Bridge Type Concrete Slab
Map NEW FREEDOM, A-12
County BALTIMORE
Bridge # and Name B0136 GORES MILL ROAD OVER LITTLE FALLS
BA-2673
BA-2673
BEE TREE MANOR
BROOK VALLEY FARMS
FREELAND HEIGHTS
GRIMESVILLE
ELF HILL
CAMPSITE
MORRIS MEADOWS RECREATION FARM
SPRING VALLEY FARMS
GORES MILL
VALLEY MILL
BENTLEY SPRINGS
PRETTYBOY ELEMENTARY SCHOOL
VALLEY MILL FARMS
PEN-DELLE MANOR
WALKER MANOR
BULLS SAWMILL ESTATES
EDEN DERRY
RAYVILLE MANOR
RAYVILLE
OWL BRANCH
GLEN DAIRY WOODS
GLEN DAIRY
WALKER
BEETRE
77


WEIGHT
LIMIT

Inventory # BA-2673

Name B0136-GORES MILL RD OVER LITTLE FALLS

County/State BALTIMORE COUNTY / MD

Name of Photographer DAVE DIEHL

Date 1/95

Location of Negative SHA

Description WEST APPROACH LOOKING EAST

Number 1 ~~15~~ of ~~24~~ 4

Inventory # BA-2673

Name B2136-GORES MILL RD OVER LITTLE FALLS

County/State BALTIMORE COUNTY / MD

Name of Photographer DAVE DIEHL

Date 1/95

Location of Negative SHA

Description SOUTH ELEVATION LOOKING NORTHEAST

Number 2 ~~16~~ of ~~24~~ 4

Inventory # BA-2673

Name BD136- GORES MILL RD OVER LITTLE FALLS

County/State BALTIMORE COUNTY/MD

Name of Photographer DAVE DIEHL

Date 1/95

Location of Negative SHA

Description NORTH ELEVATION LOOKING SOUTH

Number ~~17~~ 3 of ~~24~~ 4

Inventory # BA-2673

Name B0136-GORES MILL RD OVER LITTLE FALLS

County/State BALTIMORE COUNTY | MD

Name of Photographer DAVE DIEHL

Date 1/95

Location of Negative SHA

Description EAST APPROACH LOOKING NORTHWEST

Number 4 ~~18~~ of ~~24~~ 4